John Snow, Inc. Logistics Activities in Nepal - 2002-2006

Summary
This is a consolidation of several reports and summaries regarding John Snow, Inc. (JSI) logistics activities in Nepal through their DELIVER, Supply Chain Management Systems, Family Planning and Logistics Management, and as well as the two bilateral programs, Logistics and Child Health Services Support Project (1997-2002) and the Nepal Family Health Program (2001-2007). In addition, JSI has received funding from KfW to provide technical assistance to the GON in the construction of district storage facilities in almost 50 districts so far. This is a significant collaboration between USAID and KfW to support logistics management strengthening in Nepal.

With USAID's logistics support through JSI, reporting through the Logistics Management Information System (LMIS), stock balances, and storage conditions have improved significantly and supervision/monitoring of the logistics system has increased. Project staff consistently monitor LMIS reporting at the national level by conducting joint Project/GON supervision and monitoring at the regional warehouses, district storerooms, and service delivery points. The percentage of health facilities that adequately maintain the seven key health commodities in the NFHP core program districts at service delivery points increased significantly. LMIS reporting rates across the nation is also maintained at or around 88%.

Strengthening of the LMIS both at the central and regional level has improved the turn-around rate of information and the quality of supply decisions. Faster LMIS processing using the central LMIS database at the LMIS Unit, Teku, is critical to processing LMIS reports received from health facilities across the nation. Similarly, Regional Medical Stores' (RMS) inventory management software has helped RMSs to make supply decisions within the region in time to prevent stockouts of health commodities. Continuing warehouse modernization, clean-up, auctioning and disposal of unusable supplies at different levels of the system have freed usable hospital space as well as generated revenues. Reorganization and disposal of unused and damaged supplies/equipment has also helped stores to maintain high storage standards.

Bir Hospital is the only national referral hospital in Nepal, serving the entire country, especially the poor and underprivileged. The hospital was in serious need of logistics management improvements, but lacked the funds to strengthen and develop the required technical expertise. The Ministry of Health and Population requested JSI, through USAID support, to clean and reorganize the stores, provide limited store equipment, repair storerooms, provide logistics training and orientation to storekeepers and department managers, and devise an automated inventory management system with an LMIS monitoring component networked for commodity tracking.

In an attempt to raise the overall skill level of health personnel in health commodity logistics across the country, logistics training for various levels of health personnel was conducted with an aim to improving the quality of health services delivered at the service delivery points. The kinds of training conducted by JSI included: basics logistics training for community health workers, vaccine cold chain management, procurement training, and the "pull" system for

essential drugs. These trainings were meant to improve the quality of health services at the community level by ensuring essential health commodities are available to all who need them.

JSI also supported HIV/AIDS logistics activities with the National Center for AIDS and STD Control. The activities focused on system assessment, logistics system design and rollout. The system has received approval and support from the Director General of the Department of Health Services. JSI also produced a three-year forecast as well as regular updates for essential HIV/AIDS commodities such as HIV tests kits, anti-retroviral drugs, and drugs for opportunistic as well as sexually-transmitted infections.

Lessons learned and future directions

Global trends in health reform and donor policies are always a challenge to developing countries like Nepal. Despite geographical adversities and resource limitations, Nepal's logistics system is considered exemplary to many other countries. Nepal is a strong model of coordination and collaboration between the government and donors in delivering health care services to the people.

A major lesson learned is that, in addition to the necessary central and regional level support, community-level support is critical to ensure that commodities are available at the service delivery points including in community-level health volunteers. This is best achieved through a decentralized model such as in Nepal's Ilaka-level support where Ilaka-level health facility personnel were oriented in health logistics. This orientation has brought an impressive result in the availability of key health commodities in peripheral health facilities. Strategies of social inclusion, representation of minority groups and encouragement of the participation of community health workers and volunteers, representatives from health facility management committees, local and international NGOs, and representatives of disadvantaged communities can benefit from the enhancement of logistics management. The amount of support at the community level plays an important role in making health services more effective, efficient and accessible to all segments of the population at the community level.

Although peripheral public-sector health services in Nepal are constrained by the lack of sufficient staff and infrastructure limitations, there are critical outcomes that are possible through capacity building and strengthening of systems:

- Improving quality of services through making health commodities available at the service delivery points
- Improving access to essential drugs through improved transportation mechanisms from the district to health facilities (with addition attention to community health volunteers and peripheral health facilities that serve the poorest of the poor)
- Encouraging and enforcing wider use of LMIS for inventory management and procurement forecasting
- Involving more community-based health workers and empowering staff at the service delivery points to maintain logistics information on health commodities.

At the national level, institutionalization of logistics activities in the public sector system will strengthen the sustainability of the logistics system. The public sector system at the Ministry of Health and Population (MOHP), Logistics Management Division continues to need project-based

support to build more capacity in order for the MOHP to take full ownership of the logistics system. While continuing to support that system, a realistic phase-out plan for donor support is required.

Continued improvement of physical infrastructure and systems at all levels will help ensure that limited resources for health commodities are protected. In particular, continuing to decentralize the LMIS in the regions at the RMSs will build capacity and decision-making responsibility outside of the central level and which helps to create a stronger supply chain system.

Continued emphasis on commodity security with comprehensive and accurate forecasting of needs is essential. This is particularly important for HIV/AIDS treatment because antiretroviral therapy must not be interrupted. Continuation of HIV/AIDS logistics support will enable the roll out of HIV/AIDS treatment and care sites where they are needed most. As HIV/AIDS programs are scaled up, it is critical to have effective, efficient and flexible logistics systems to manage the associated commodities.

Key Results

ELEMENT I: IMPROVED LOGISTICS SYSTEM

JSI provided technical assistance as well as limited funding for local costs associated with NFHP's logistics strengthening activities. NFHP's logistics activities include Ilaka-level interventions; strengthening of logistics information systems; regional logistics workshops to address the emerging logistics issues; joint technical support visits to address issues including stock out, supply imbalances, decentralized processing of LMIS, use of LMIS, LMIS reporting, use of the pull system; and district storeroom construction with warehouse modernization, repair and renovation of the MOHP central warehouse, etc. The funding for construction was received from KfW. All of these activities contributed to improved logistics indicators.

INCREASED STOCK AVAILABILITY

Ilaka level meeting in Dhanusha (June 2005)

Over the past three years there were reports of continual stockouts in the health facilities as well as at community levels in NFHP CPDs[1] mainly in Siraha, Bara, Bardiya, Banke, Sunsari, Mahottari, and Parsa districts. Though there has been an increase in the percentage of health facilities that have year round availability of seven key commodities[2], many districts still experienced high stockout rates. The NFHP Logistics Team designed and developed a special LMIS report to monitor stockouts of the seven key commodities in districts and health facilities. The team began intensive monitoring

[1] NFHP Core Program Districts are: Jhapa, Morang, Sunsari, Siraha, Dhanusha, Mahottari, Rautahat, Bara, Parsa, Chitwan, Rasuwa, Nawalparasi, Banke, Bardiya, Bajura, Kailali, and Kanchanpur

[2] Condom, Pills, Injectables, oral rehydration salts, Vitamin A, Cotrimoxazole, and Iron Tablets

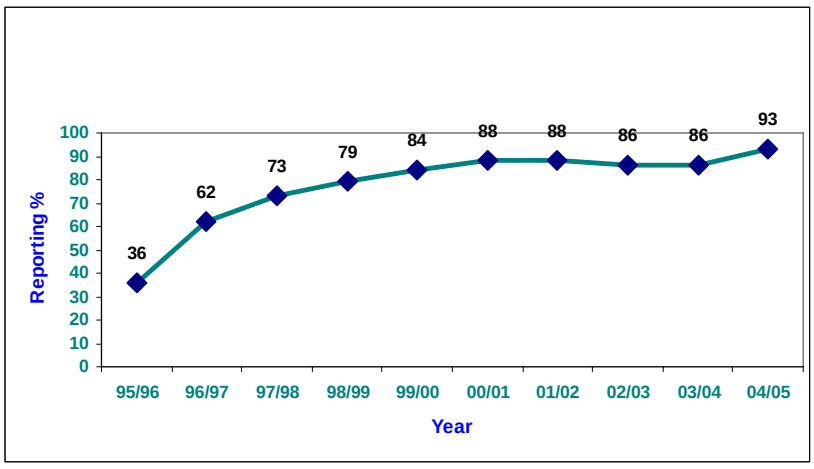
and supervision of the CPDs to minimize stockouts of these commodities in health facilities. Analysis of the monitoring data allowed the team to identify the key program item that regularly has the highest stockout rate. DELIVER technical support staff from the capital frequently provided supervision to the poor performing districts to identify and resolve the cause of the high stockout rate. The NFHP field offices and logistics support officers stationed at Regional Medical Stores (RMS) were mobilized to assist with this supervision and provide oversight to the problem CPDs. With all these efforts, the availability of key commodities at the SDPs increased significantly. Table 3 indicates the successful decrease in stockouts of the seven key commodities since the start of the Ilaka-level orientation.

Table 3. Percentage of Health Facilities with ALL 7 Key Commodities Available in All Four Quarters

District	58/59 (2001/02)	59/60 (2002/03)	60/61 (2003/04)	61/62 (2004/05)	62/63 (2005/06) (2nd Qtr)
Jhapa	20	14	44	90	80
Morang	23	24	42	79	90
Sunsari	12	10	65	100	100
Siraha	6	8	24	71	72
Dhanusha	17	22	27	69	86
Mahottari	2	4	38	84	78
Rautahat	43	32	67	93	98
Bara	13	12	15	27	47
Parsa	23	20	44	66	81
Rasuwa	39	53	67	82	53
Chitwan	48	59	56	68	85
Nawalparasi	46	45	40	56	66
Banke	38	28	19	81	94
Bardiya	30	33	27	70	74
Kailali	47	40	79	26	47
Kanchanpur	14	19	67	48	52
Bajura	41	44	26	4	7
17 CPDs	**27**	**27**	**44**	**66**	**71**

STRENGTHENED REPORTING RATE

Figure 1. Percentage of Health Facilities Submitting LMIS Forms



The LMIS national health facility reporting rate improved from 36% in 1995 to 93% in 2005. From 2000-2005, the reporting rate was maintained well above the milestone of 85%. Health facilities information is regularly updated and the districts are increasing the use of LMIS data

for decision-making. The LMIS data bank is regularly used to monitor the stock status of the seven key commodities in districts and health facilities.

STRENGTHENED LOGISTICS MANAGEMENT INFORMATION SYSTEMS

The LMIS is a major success for the MOHP. The LMIS operates reliably, processing data from more than 4,000 health facilities each quarter to produce data needed for operational management of the MOHP logistics system, including regular stock resupply decisions. The LMIS Unit of LMD compiles these data into quarterly reports that are distributed to districts and regions, to the concerned MOHP divisions at the central level, and to EDPs where appropriate. With the successful increase in logistics data managed at the central level, the Microsoft Access-based server in the LMIS Unit has become slow. As a result, it is recognized that this server must be replaced with a faster, more efficient LMIS software at the central level to save time for data entry, data verification, and feedback report generation activities.

Given the volume of supplies that RMSs have to manage throughout the year, faster turn around of inventory information is required to make effective and efficient supply decisions for the country. To address this, the RMS inventory management software (IMS) was developed to monitor the stocks by the DELIVER Logistics Team in coordination with the LMD. The benefit of the IMS at the central level has led to the belief that RMSs could benefit from a similar system. Establishing a well functioning inventory management system with the creation of an inventory database of expendable items at the RMS level will enhance the resupply decision and transfer critical skills to RMS staff, thus strengthening the capacity of RMS staff.

STRENGTHEN BIR HOSPITAL LOGISTICS

Bir Hospital is the only national referral hospital in Nepal, serving the entire country, especially the poor and underprivileged. The hospital was in serious need of logistics management improvements, but lacked the funds to strengthen and develop the required technical expertise. In April 2003, the MOHP requested USAID to assist in strengthening the Bir Hospital logistics system. The first stage of the technical assistance strengthened the storage capacity of Bir Hospital by repairing, refurbishing (roofing and other repair) and refurnishing the store room (provided racks and pallets for storage) which was vacant and not in use. Additionally, DELIVER assisted in dejunking the unusable supplies that accumulated in the hospital over the years. The general hospital store was moved to the newly refurbished room, which vacated the old store and allowed the hospital to install 48 additional patient beds.

DELIVER developed an automated IMS at the hospital to strengthen the health logistics management for providing effective and efficient essential health services in different service delivery units and wards. The local area network-based computer system was installed in four wards. Four computers, printers, uninterruptible power supplies, computer tables, and chairs were also delivered to the hospital as part of support to the program. Key staff were provided basic health logistics training to improve knowledge and skill levels in this field.

Success Story: Additional Space for 48 Patient Beds

There was heavy pressure to increase the number of beds in Bir Hospital and management was unable meet this need because the required construction was too expensive. Additionally, there was no available space or land for the required construction. After cleaning and reorganizing the general store, the big hall on the ground floor of the facility, which was previously occupied by the store, was freed. This free space allowed for 48 additional beds: 24 for general care and 24 for intensive care. The old hospital building was renovated and the general store was moved. The 48 additional beds resulted in a 12% increase in the number of beds, now allowing 17,520 indoor hospital days per year.

WAREHOUSE MODERNIZATION/DE-JUNKING AND CLEAN UP

Increasing district-level storage capacity has been one of the successful DELIVER activities. In addition to the district focus, many health facilities below the district level are in critical need of storage equipment such as racks, pallets, and cupboards. Many peripheral health facility stores also require assistance and have requested DELIVER support for storeroom accessories such as racks, pallets, and cupboards. DELIVER assessed the need of the health facilities in coordination with the respective District/Provincial Health Officers (D/PHOs). Based on the report from the D/PHOs, the required storage equipment was provided to health facilities in Kanchanpur, Kailali, Dhanusha, Jhapa, and Mahottari districts. This initiative improved the storage quality of health commodities and maintained storage standards at the facility stores. The goal of improving storage standards at the sub-district health facilities is to minimize wastage and expiry of valuable health commodities, thereby saving lives of the people, increasing the service utilization and conservation of valuable resources.

In 2005, the LMD requested DELIVER to clean and reorganize the Mechi Zonal Hospital and Narayani Sub-Regional Hospital. In addition to dejunking and reorganizing the storage space, this DELIVER-supported activity was able to free a total of 5,730 square feet of space at the facilities and the Narayani Sub-Regional Hospital was able to generate Nepalese rupees (NRs) 338,000 by auctioning off items to be disposed of in a public forum. This profit was deposited into the National Treasury. The DELIVER logistics team also provided technical assistance to the D/PHO in the Kathmandu and Sagarmatha (Rajbiraj) Zonal Hospitals for clean up, auctioning and disposable of unusable commodities. A total of NRs 29,000 has been collected from this activity and deposited in the National Treasury and an area of 1,050 square feet have been vacated which can now be used for health care purposes.

In 2005, unusable health commodities, old vehicles and vehicle parts were auctioned and disposed of in the LMD complex at Teku. This auctioning and disposal vacated a total of 2,800 square feet and generated NRs 865,001 which was deposited into the National Treasury. The free space is now used for packing and loading of commodities for transportation. DELIVER has participated in similar activities in the Teku complex premises.

LMD: Brick Soling

Cleaned Pavement: LMD

One simple, yet effective, activity undertaken to improve warehousing facilities throughout the country was to procure eight electronic weighing machines for the LMD to distributed to central, transit, and regional warehouses. These weighing machines have the capacity to weigh 300 kg and increase the efficiency of day-to-day activities, such as, packing cartons to the right weight to fit into a vehicle and estimating the price for a carrier, in the warehouses.

TRANSPORTATION OF COMMODITIES TO DISTRICTS IN EMERGENCY SITUATIONS

During the 2004-2005 fiscal year, the RMSs in Nepalgunj and Biratnagar requested the LMD to provide support for the transportation of Annual Indent Drugs by air because, due to the conflict situation

prevailing in the region, these commodities could not be transported by road. The LMD director requested financial support from donors to airlift the Annual Indent Drugs (EDs) because the service delivery points were having problems providing the curative services needed. These drugs were already packed and to be delivered in December, 2004-January, 2005 but due to the conflict, the RMSs were not able to deliver to the districts. USAID/Nepal, through DELIVER, provided financial support to deliver these drugs to the conflict areas of Solukhumbu and Okhaldhunga, ensuring availability of critical drugs at the SDPs that otherwise would have stocked out.

ELEMENT II: IMPROVED HUMAN CAPACITY IN LOGISTICS

Human resources make the supply chain work effectively and efficiently. All people who interact with the supply chain have a customer service role, and each person must be customer-oriented for the logistics system to function optimally. Therefore, people in the supply chain need specific skills, knowledge and attitudes, and motivation or internal drive to succeed. DELIVER is strengthening human resource capacity in logistics. Efforts to date in human resource capacity building have principally been directed towards strengthening the LMD at the central level and providing basic training for staff at the district and at the SDPs. The training materials from these interventions have been prepared and published. DELIVER supported the following trainings to improve the logistics capacity of health personnel at different levels.

LOGISTICS TRAINING FOR MATERINTY AND CHILD HEALTH WORKERS/FEMALE COMMUNITY HEALTH VOLUNTEERS

Female Community Health Volunteers (FCHVs) are considered one of the best resources to improve utilization of health commodities at the community level. The community-based Maternity and Child Health Workers (MCHWs) are the best linkage to work with FCHVs because they are based in the community and act as paramedics. Therefore, MCHWs were used to link to FCHVs, who were used to effectively distribute health commodities for providing quality health services at the community-level.

In a Sub-Health Post there is no separate position to manage logistics activities. Logistics management often is the responsibility of other personnel, such as MCHWs and FCHVs. Therefore, it is strategically necessary for these positions to receive logistics management training. In the 2005/2006 fiscal year, over 400 MCHWs and FCHVs in five districts were given logistics training. The intended outcome of this training is two-fold. The commodity availability at the community level will be increased and MCHWs and FCHVs will be empowered to regularly undertake logistics activities in their daily work. Providing these workers with logistics training in turn helps health facilities submit accurate and timely reports to ultimately improve the quality of health services at the community level.

HEALTH LOGISTICS AND EPI COLD CHAIN MANAGEMENT TRAINING

EPI campaigns have a great impact on reducing childhood mortality because they protect against preventable diseases, making EPI one of the most important public health programs of the MOHP. The products required for the EPI campaigns are often more delicate than other important program items and quality immunization services require rational storage practice, transportation and availability of adequate stock of vaccines.

Prior to the start of NFHP, incorporation of EPI items into logistics training curriculum was recognized. A training curriculum and procedures manual were developed for a three-day training in April 2001. The training was conducted in all five Regional Health Training centers by the government trainers with the technical and financial support from NFHP and DELIVER.

DISTRICT LEVEL PROCUREMENT CAPACITY TRAINING

The MOHP has revised the procurement act to encourage decentralization of procurement to the district level. Procurement-related problems, such as lack of, delayed, or low quality procurement, hinders implementation of the government's decentralized procurement policy at the district level. It was

recommended that the district level receive strengthening in procurement practices, particularly in the districts where a pull logistics/procurement system for EDs was employed.

The procurement training system for the district level is a new initiative and focuses on rules and regulations for procurement of health-related goods. The DELIVER logistics team participated in the development of a training curriculum and provided procurement training for Sunsari, Nawalparasi, Dhanusha, Mahottari, Rautahat, Bara, Chitwan, and Sarlahi districts in close collaboration with the LMD, National Health Training Center (NHTC), and NHFP. The training was completed in March 2006.

The training is expected to improve the timeliness of procurement by the D/PHOs in order to reduce the effects of stock imbalances and increase the effectiveness of health services. With strengthened procurement capacity, districts are empowered to procure drugs and other health commodities. Of particular importance is the procurement of oral rehydration salts and Cotrimoxizole, as these commodities have experienced significant stockouts in the past.

BASIC LOGISTICS TRAINING FOR NURSING IN-CHARGES AND STAFF OF REFERRAL HOSPITALS

The main objective of providing basic health logistics training to the staff of referral hospitals from different units and wards is to update and upgrade knowledge and skills on health logistics in order to provide effective and essential health services.

A two-day Basic Health Logistics Training was conducted at Bir Hospital, Maternity Hospital, and Kanti Children Hospital. Significant changes are found in the logistics management at these referral hospitals. As commented by the Matron of Bir Hospital, the training is very useful for providing services to the client. After the training sessions were conducted at each facility, monitoring trips were conducted to understand the impact of the logistics training. One significant improvement that was noted was how equipment, products and registers/records are not kept in an organized manner. The staff use a general cleanliness checklist to maintain these critical areas.

PULL SYSTEM TRAINING FOR ESSENTIAL DRUGS

In August 2003, a task force was formed to implement the Pull System for Essential Drugs under the LMD. The Pull System for EDs decentralizes the resupply decision-making responsibility for all government-provided commodities to the local level. The Local level will pull supplies from the regional level, instead of having commodities pushed to them as it has been in the past. Subsequently, a workshop on initiating the Pull System for EDs in Healthcare Logistics was organized jointly by the LMD, KfW, and NFHP in November 2003. This workshop ensured policy endorsement for the implementation of the Pull System. The Pull System strategy will unite all government-provided health commodities under a single distribution strategy, and will complete the effort to decentralise resupply decision-making.

LMD Director Dr. M. K. Chhetri addressing the Pull System for EDs Workshop: August 2003

NFHP in coordination with the NHTC, LMD and KfW developed the curriculum to implement the Pull System for EDs. The training was implemented following the construction of the district storerooms by

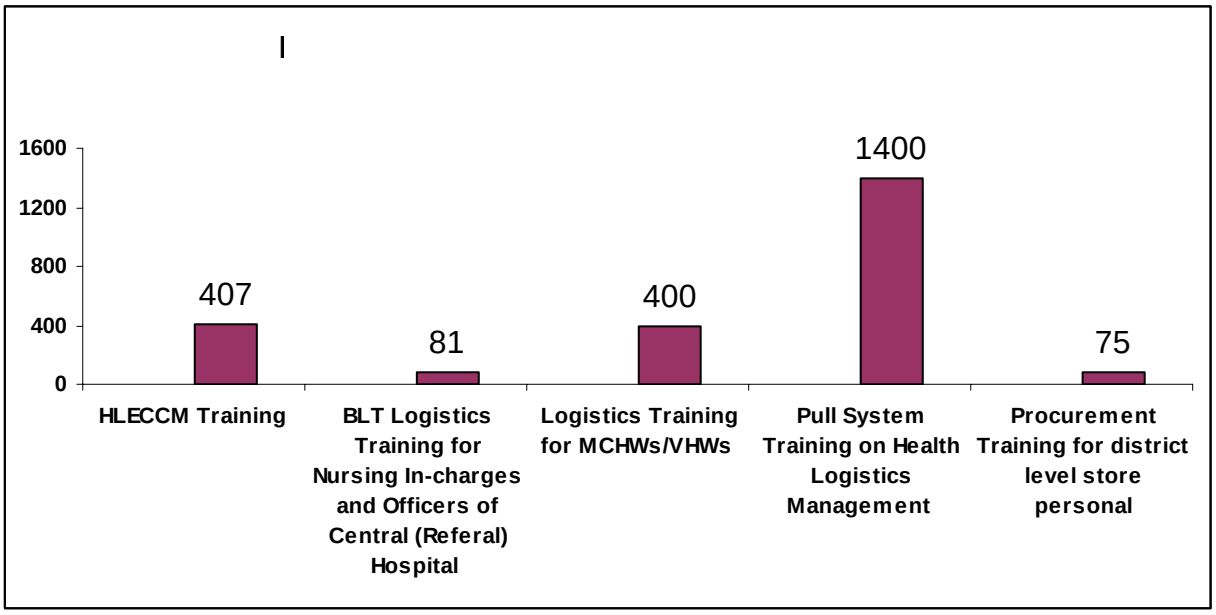
LMD in six initial districts[3] in the 2004/2005 fiscal year and eight more districts in the 2005/2006 fiscal year[4].

The Pull System for EDs is in line with devolution and decentralization policy of the Government of Nepal. Additional effort to scale up this Pull System for EDs is envisioned by the Health Sector Reform Implementation Plan to deliver the essential health care package services. Implementation and scale-up of the Pull System for EDs will address the MOHP chronic stockouts of essential drugs in health facilities, thereby improving the quality of health services to the consumer.

ACHIEVEMENTS

From 2003 to 2006, a total of 2,363 government personnel were trained in the DELIVER-supported health logistics trainings. The pull system training for essential drugs and program commodities and Ilaka (sub-district) level meetings have significantly contributed to increase the product availability (from 27% to 70%) in CPDs. In addition, central and regional level supervision and monitoring improved the logistics (LMIS) reporting from 80% to 90%.

Figure 2. Health Logistics Persons Training 2003-2006



(HLCCM- Health Logistics and Cold Chain Management Training; BLT-Basic Logistics Training; MCHW-Maternal and Child Health Worker; VHW-Village Health Worker)

ELEMENT III: IMPROVED RESOURCE MOBILIZATION FOR CONTRACEPTIVE SECURITY

The major players contributing to contraceptive security (CS) in Nepal are the MOHP, Family Planning Association of Nepal, and social marketing programs. Nationally, US $32 million is required for the period 2006-2010 to meet the estimated contraceptive need of Nepal. Of the US $32 million, only US $11.23 is committed by donors and MOHP, leaving a shortfall of over US $20.77 million for contraceptives starting in mid 2007.

DELIVER has played a key role in meeting contraceptive requirements by organizing a consensus forecasting meeting twice a year in coordination with the LMD of MOHP. The bi-annual meeting,

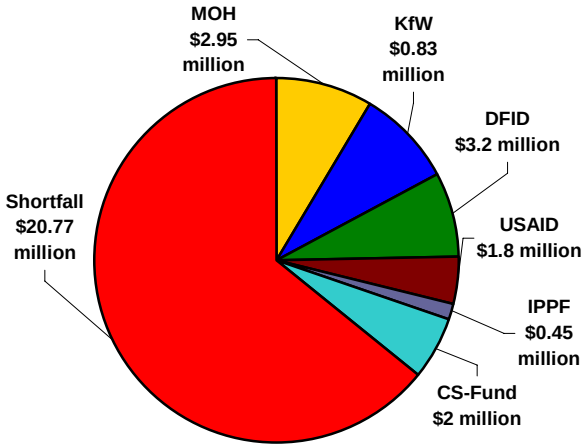
[3] Bara, Rautahat, Chitwan, Sarlahi, Dhanusha, and Mahottari

[4] Sunsari, Siraha, Parsa, Tanahu, Nawalparasi, Kapilvastu, Bardiya, and Kanchanpur

attended by donors and stakeholders, reviews the contraceptive forecasts, pipeline and allows for resource allocation for contraceptives procurement, including MOHP's funding.

Obviously, any shortfalls noted here will be in the main agenda for discussion and action in the next consensus forecasting meeting.

Figure 3. Sources of Funds to Meet Contraceptive Requirements (US$) (2006-2010)



ELEMENT IV: IMPROVED ADOPTION OF ADVANCES IN LOGISTICS

HIV/AIDS & SEXUALLY TRANSMITTED INFECTIONS (STI) COMMODITY LOGISTICS SYSTEM

A well-functioning logistics system and effective supply chain are essential to the success of every HIV/AIDS program, leading to the phrase "no product no program". Over the last fifteen years, evidence has shown that the right programmatic approaches applied quickly and thoroughly, can result in lower HIV infection rates and a higher quality of life for those affected by the AIDS epidemic. A strong supply chain is critical to the success of any effective HIV/AIDS program by ensuring the delivery of the right products to the intended recipient, thereby minimizing the possibility of diversion or unregulated use of drugs.

Since the fall 2005, NFHP and DELIVER staff have been involved in HIV/AIDS activities with National Center for AIDS and STD Control (NCASC). The initial activities were the carrying out of a field assessment, the development of a three-year forecast for HIV tests, ARVs, STI and OI drugs, and formation of a national HIV/AIDS Logistics Committee, chaired by the Director of NCASC. DELIVER organized a logistics system design workshop and developed an HIV/AIDS commodity logistics standard operating procedures (SOPs) manual (which was translated into Nepali). Following the logistics system design workshop, the DOHS Director General granted approval for the implementation of the logistics system for HIV/AIDS commodities. A Memorandum of Understanding was developed between NCASC and key players to negotiate the management of antiretroviral drugs, HIV test kits and other HIV/AIDS-related commodities. DELIVER has transitioned the rollout of the system (SOP manual, training of trainers (TOT) and training) to the Supply Chain Management Systems (SCMS) project funded by USAID and implemented by JSI and partners.